REMARKS

Responsive to the aforementioned Office letter, the status of each of the claims in the application has been presented herein and that status has also been identified with each claim. For ease of consideration, the remarks of this amendment have been divided into sections.

I. Election/Restrictions

In response to the original restriction set forth in the Office Action dated June 27, 2002, the applicant has cancelled all of those claims directed to the inventions identified as II, III, and IV. These claims may be presented in divisional patent applications. The applicant, however, has retained claims drawn to non-elected species for reasons presented below.

Applicant recognizes that the election/restriction requirements previously advanced have been made final. In so doing, the Examiner has literally withdrawn many claims drawn to the non-elected species. However, and as the Examiner is aware, if a generic claim dominating that particular species is deemed to be allowable, then that species would also be allowable. Therefore, the applicant has maintained many of the species claims in this present application. It is believed that the independent claims, as presented herein, should be in allowable condition and hence, all of the dependent claims dominated by the respective independent

claims should also be allowable, all for reasons as hereinafter described.

The Examiner took the position that Claim 12 recites a non-elected pressure transducer switch. Again, and recognizing the finality of the restriction/election requirement, it is urged that one of the important, if not critical, aspects of the invention is the fact that a pressure sensing means senses a pressure change which is used to control movement of the pool cover. This pressure sensing means is used in and is required in all embodiments. Please note, for example, those circuit diagrams illustrated in Figures 12-14. In substance, a transducer for responding to the pressure differential condition plays an important role in enabling the invention to operate in the manner as described.

A pressure differential usually is generated at, or in proximity to, the swimming pool and the cover drum. This pressure pulse is transmitted along the hydraulic line back to the remote electrically located power pack. The pressure pulse is effectively converted into an electrical pulse by a latching relay and the latter of which is located at or in proximity to the remote power pack. In this way, there is no electrical current anywhere at or near the swimming pool and the cover drum. In effect, the cover drum is entirely operated by fluid, and particularly hydraulic fluid, and only by fluid at or in proximity to the swimming pool.

This is a point which will be hereinafter discussed in more detail in connection with the rejection of the claims on their merits.

It is urged that the pressure differential arrangement, which can be referred to as a pressure pulse generating arrangement, in combination with the latching relay or other electrical circuit, will accomplish the result of controlling movement of the cover without need of an electrical arrangement at the swimming pool. This is an integral part of the invention and cannot be stripped from the invention. The applicant's undersigned representative discussed this issue with Examiner Blair Johnson on June 27, 2003 and Mr. Johnson courteously indicated that this combination would be prosecutable in the instant application. The Examiner's action in this respect and the courtesy of that telephone interview is sincerely appreciated.

In summary, with respect to the restriction requirement, since several of the claims have already been amended to bring them back into the scope of the elected invention, and inasmuch as the applicant is entitled to examine all claims covered by allowable generic claims, it is believed that all specie claims should be properly treated in this present application. In other words, the applicant should be given "his day in court." If the generic claims are allowable, the specie claims should be examined and also should be deemed to be allowable. If the generic claims are not

allowable, then the applicant would be forced to treat those claims as provided by the Code of Federal Regulations.

II. Rejection Under 35 U.S.C. 112

Claims 10, 19, 22, 24 and 26 were rejected as being indefinite under 35 U.S.C. 112. The other objections under 35 U.S.C. 112 have all been obviated by amendment herein.

III. Concept of the Present Invention

One of the important aspects of the present invention, which was briefly discussed with Examiner Johnson on June 27, 2001, is the fact that the applicant has provided a buoyant swimming pool cover system which is completely insulated from any electrical current at or in proximity to the swimming pool. It is noteworthy that Granderath does have a buoyant cover system and, indeed, is believed to be one of the first to have a buoyant pool cover system. However, Granderath, like numerous other pool cover systems, relies only on the use of electrical power.

The use of hydraulic power for operating a pool cover is well known and a complete hydraulic system was developed by the same inventor, Harry Last, many years earlier. However, that hydraulic system was used with a conventional pool cover, such as a fabric pool cover, and not with a non-flotatable buoyant pool cover. A cover drive system for use with a buoyant cover raised vastly

different problems than with a non-buoyant cover and which necessitated an almost complete redesign of the cover drive system. The complete hydraulic drive pool cover system, which was developed by the applicant, is more fully specified in paragraph 0010 of the printed publication of this application, namely publication No. US2002/0046817 A1. See, for example, column 1, paragraph 0010 and also column 1, paragraph 0011.

In Granderath, the operation is relatively simple. Granderath uses an electric motor to drive a cover drum and locates the electrical power system in a compartment adjacent to and theoretically electrically insulated from the cover drum and the cover itself, the latter of which are submerged in the swimming pool. Some electrical control element is located at or in proximity to the end of the swimming pool, presumably to stop movement of the cover. Attention is also invited to the aforesaid printed publication, pages 1 and 2, paragraph numbers 0013 and 0014.

Granderath latches the cover with a hooking device to prevent the cover from opening -Fig. 13 and a cable 78 to provide some structural integrity to the slatted cover . There is actually no teaching of a limit switch in the patent per se. Rather, from a printed publication, and the applicant's familiarity with covers marketed by Granderath, the applicant wishes to advise that Granderath does, in fact, also employ a rotary electrical limit

switch coupled directly to the cover drum shaft to count revolutions of the cover drum and to stop the cover at preset end travel points.

Granderath also discloses the use of a counter as some means of measuring the movement of the pool cover. However, the counter also is electrically operated which, again, brings electrical current in proximity to the swimming pool. As hereinafter described, the applicant is very much aware of the state of the floating slatted cover art in Europe and is presently a part owner of a company in Europe which manufactures sells and installs such pool cover systems.

In the hydraulic drive system, and with a buoyant cover, it must be remembered that the force of gravity and the force of the buoyancy will cause the cover to unwind from the drum and start traveling movement across the swimming pool. In this case, the cover would be moving and accelerate toward the closed end position of the pool in a relatively uncontrolled manner and with the possibility of damage to the pool cover or otherwise the drive mechanism.

In an effort to keep electrical power away from the swimming pool, it was necessary to devise a completely new system to prevent this possibility. In accordance with the present invention, it is desirable to ensure and the present invention has accomplished that result of ensuring that all components at the swimming pool are

only operated by a non-electrically conductive hydraulic fluid. The electrical power pack, which actually supplies the power causing movement of the hydraulic fluid under pressure, is located at a remote site, some distance away from the swimming pool, e.g. 10 feet or more, or at least in a location where electrical power is sufficiently remote from the swimming pool to be safe for use. Hydraulic lines carry the fluid from a fluid pump operated by an electric motor at the remote power pack to the fluid drive at the swimming pool. In this way, only hydraulic fluid reaches the swimming pool and generally with no electrical power.

The cover drum is driven by a hydraulic motor which, in turn, causes rotational movement of the drum, as aforesaid. In order to control the rate of movement of the cover to the closed position, various brake mechanisms may be employed. However, some means of determining the position of the cover as it approached the end position had to be developed and moreover, this means desirably was to be non-electrical. In the case of Granderath's current product, an electrical element, e.g., a simple limit switch or a rotational counter, was employed. However, either required the presence of electrical current at the swimming pool. The applicant has solved the problem by generating a pressure differential, preferably in the same line which supplies hydraulic fluid to the motor, using that pressure differential, such as a pressure pulse, to operate an

electrical circuit which could, in turn, interrupt the operation of the power pack.

IV. Differences Between Buoyant Cover and Non-Buoyant Cover Drive Systems

The prior art references cited in the prosecution of this application, such as, for example, Granderath and Ragsdale, would appear to require a discussion of the main differences between drive systems for a floatable cover, such as the buoyant cover, or the non-floatable cover, which would actually sink if not constrained.

The first body of prior art, which is defined by patents such as the Lamb Patent, those of the applicant Harry Last, and Ragsdale et al., etc. all pertain to non-floating flexible fabric sheets which will sink unless constrained in at least two, and preferably four, of the edges of the pool. In the vast majority of these prior art non-floatable cover drive systems, cables are attached to the front and side edges of the pool cover fabric in order to pull the fabric across the swimming pool to the closed position. The cables are wound upon and unwound from cable reels. The front edges of these non-floatable covers usually have a rigid member spanning the width of the pool and constitute the area in which the cables are attached. Moreover, these systems are generally referred to as "safety systems" since they are constrained on all

sides and can keep small children from entering the swimming pool itself.

The obvious problem with each of these prior art systems is the fact that the entire electric drive system had to be in close proximity to the swimming pool and which raised the inherent problems of maintenance and safety. As a matter of interest, the Shultz Patent No. 4,203,174 (hereinafter discussed in more detail) attempted to deal with this problem, although most of the electric components still remained in close proximity to the pool.

The applicant, Harry Last, filed one of three patent applications as far back as 1991 in which a completely hydraulically operated drive system was located in proximity to the swimming pool with the power pack located at a remote location. The Ragsdale Patent, also cited by the Examiner and also hereinafter discussed in more detail, disclosed a variation, namely, a single hydraulic motor with mechanical clutches. Ragsdale also provided stops at the end of the cover for stopping the movement of the cover.

The second main body of prior art exemplified by Granderath, comprises the previously described non-safety covers which are designed to float on the swimming pool surface. As a result, they do not need to be constrained to the sides of the pool. As indicated, they are not considered to be safety covers since they are not so constrained. Nevertheless, in these systems, the

floating cover was retracted from the swimming pool surface and wound on the cover drum, much in the same manner as the previously described safety covers. However, extension of the cover across the swimming pool was accomplished by flotation and the buoyant characteristics of the cover. When the cover was located in a submerged condition, the cover had a strong tendency to propel itself to the surface and drive across the water surface of the swimming pool.

The floating covers, or non-safety covers, frequently are constructed of a plurality of buoyant panels connected by fabric hinge elements. As a result, the cover itself has no real structural integrity inasmuch as each of the buoyant panels are not rigidly connected to one another. In contrast, the safety covers, namely those which are constrained on at least two opposite sides and are pulled by cables, were formed of a fabric material and since they were not comprised of a plurality of independent panels, they did possess some integrity. The differences in construction caused need for designing entirely different pool cover systems for winding and dispensing the covers.

The non-flotatable cover is usually comprised of a rigid member at the front end of the cover and is constrained in side rails along the sides of the swimming pool. Moreover, it is pulled by cables because the cables, which are typically attached to the front ends or the sides of the pool cover, cannot be pushed across

the swimming pool and certainly will not move across the swimming pool through any force other than one externally applied to the cover. Generally, this external force is a pulling force attached to the front edge of the pool cover. Cables must be employed and/or driven either by a hydraulic system, as shown in Ragsdale et al., or an electric drive system, for which there are numerous prior art patents. In the case of the cable operated pool cover systems, flotation forces did not cause movement of the cover and, indeed, the cover would sink unless constrained. Thus, in order to unwind the cover from the drum and across the swimming pool, the cover was pulled by cables which were trained about reels which were driven. In order to retract the cover, the drum had to be powered for rotation. However, the drive system only had to have sufficient power to wind the cover upon the drum.

The problem of determining when the cover was reaching an end position so as to stop rotation of the drum existed both in the non-flotatable cover drive system and in the flotatable cover drive system, although for different reasons. With the non-flotatable drive system, the power source, such as the hydraulic motor or the electric motor, if employed, had to provide sufficient power to roll the cover onto the drum for opening same; however it does not need to overcome the very substantial buoyant forces or gravitational forces of the floating covers. In the case of the flotatable cover, the force moving the cover to the closed position

was only the force of gravity or the buoyant force. In contrast, with the non-flotatable cover, the drive system had to move the cover in both directions, pulled by cables/reels in the covering direction and by the powered cover drum in the uncovering direction.

In each case, some means had to be provided in order to stop the movement of the cover at the closed and open position. However, there are major differences in the methods in which this can be accomplished. The non-floating covers which are pulled across the pool with cables, attached to the front leading edge of the cover, can simply have the cables pull the cover leading edge against the pool end wall, thereby physically preventing further cover travel. Conversely, the leading edge can also be pulled against the pool cover open end wall, by virtue of the rigid leading edge of the cover being attached to the cover fabric, and being pulled back by the cover fabric attached to the powered cover drum, stopping the cover. Since the cycle time is short (20 to 30 seconds) and the operator is required by safety standards to hold the mandated momentary switch, to prevent accidental covering and drowning of swimmers, he simply releases the switch and stops the cover. This will occur when the operator hears or sees the cover reach its end of travel. This has essentially been the prior art since the early sixties.

In the case of floating covers, there are no cables at the front of the cover and the cover is propelled across the pool by force of floatation or gravity. Driving the cover against the pool end wall will simply cause the cover to buckle and crumple up against the pool end wall, until the cover drum from which the cover is being unwound is stopped. Furthermore, as Granderath recognized, there was a limit to the speed of travel of the cover being unwound from the cover drum, and to prevent buckling and the drum speed had to be limited to a specific rate of rotation as, for example, 3-4 rpm as opposed to the customary 35 rpm for a safety cover. This meant that instead of a cycle time of 20 to 30 seconds to open or close the cover, the cycle time for the floating covers now increased to 4 to 5 minutes. This is generally considered to be an intolerable length of time for an operator to have to hold the control switch. As a result, these floating and generally non-safety covers, had to be provided with latching relays or a typical holding circuit in which the operator simply momentarily presses a start switch and the system operates by itself and relies upon electrical limits to stop the cover automatically. In effect, in almost every prior art system which used a floating cover, electrical limit switches were used to detect the end position and stop the movement of the cover.

Another difference between floating and non-floating safety covers is the fact that safety cover fabric has substantial tensile

capability to be able to support children and adults. Hence there is no problem using the cover fabric as a tensile member to pull the cover leading edge against the cover open edge of the swimming pool. This is generally not the case with the slatted covers comprised of slats hinged together or the bubble or foam covers as described by Stolar. Tensile force applied to these covers will pull them apart. This is further exemplified by Granderath's disclosure of a cable 78 (Fig 12) underneath the cover to improve the structural integrity of the cover when the cover is latched at the closed end (Fig 13).

In general, the prior art generally employed electrical limit control systems. These electrical control systems may include counters which count rotations of a driving member, such as a drive shaft, or otherwise, they may be limit sensor or mechanical lever switches located at the pool cover travel end points.

In an alternative arrangement, as also taught by Granderath, the cover drum can be suspended above the pool, adjacent one end thereof, and gravitational force is used to propel the buoyant cover across the pool. In that arrangement will also tend to accelerate well in excess of the normal buckling speed of 3-4 rpm. The problem of providing a braking force to preclude over-acceleration and over-travel of the cover at the front end of the swimming pool was inherent in both the cover drum which is suspended above the pool and that which is submerged. In the case

of the submerged cover drum, Granderath used a self-locking worm gear reducer.

One of the major problems with all of the prior art cover drive systems using floatable covers is that there is not one conventional fluid drive system in which all of the electrical components, are located in a position remote from the swimming pool. Usually the limit control elements to control movement of the cover that provide a sensing of the presence of the cover, at the open and closed positions, were electrical control position sensing elements, as well as electrical rotary limit switches, coupled mechanically to the cover drum.

Admittedly, a limit switch could be operated by a low voltage source of power, as opposed to the power necessary for operation of a cover drive motor. However, that nevertheless created the safety and maintenance problem of electrical current in proximity to the swimming pool. It remained for the applicant herein to provide a true fluid cover drive cover system in which all aspects of that system in proximity to the pool were non-electric. Moreover, all of the electrically operated components, even including the functions of the limit switches, were remotely located.

V. Brief Discussion of the Prior Art References

The Examiner primarily relied upon the Granderath Patent in combination with Ragsdale et al. '613, the Layer Patent, the Shults

Patent, and the Mimeur Patent. It is believed that a brief discussion of each of these references will aid in further prosecution of the claims of this application.

A. Granderath U.S. Patent No. 3,613,126

The Granderath Patent was to some extent described above. However, it does disclose one of the basic concepts in driving a buoyant cover and winding same onto a drum and allowing unwinding of same in order to close the cover. Admittedly, Granderath does disclose the basic components, as best shown in Figures 8 and 9 as, for example, a cover drum, an electric motor, and a gear reducer, with the reducer being mechanically coupled to the shaft of the cover drum.

Beyond these basic teachings, there is a wide departure between the teachings of Granderath, compared to the instant application. As the Examiner correctly noted, Granderath uses an all electrical system and, moreover, those components are located dangerously close to, if not almost in, the swimming pool itself.

Moreover, Granderath uses his electric motor drive in a compartment adjacent to that of the swimming pool. The drive shaft must extend through the dry-wall between the two compartments in order to allow operation of the cover drum.

That which remains unsaid is that seals can leak. When that occurs, water will seep into the compartment containing the

electrical components. Moreover, since that compartment is underground, rainwater and other water will seep into the power pack compartment thereby increasing the potential risk of electrical shock hazard, as well as the attendant maintenance and severe motor damage problems. Thus, and while Granderath discloses an effective system for buoyant slat covers, the rhetorical question must be raised, namely, "would the safety conscious individual allow his children or loved ones to swim in a swimming pool construction of the type shown in these prior art references?"

Granderath also employed a worm gear reducer as a means of controlling the rate of movement of the cover.

However, it is noteworthy that worm gears have been used by others long prior to Granderath as a type of braking means. Nevertheless, and while the worm gear provides a braking action in one direction, there is complete freedom of movement in the opposite direction. In other words, and in the case of a pool cover, although the worm gear arrangement can provide an effective braking action for controlling the rate of speed of the cover to the closed end position, the drive motor must also overcome the additive force of the inefficiencies of the worm gear drive when moving the cover to the opened position. In addition, it is well known that under certain conditions the cover drive reducer may still "back-drive" or creep, and consequently many of the floating

covers use a more costly double reduction gear box (two reducers in series) to prevent "back driving" or "creep".

The applicant discloses preferred hydraulic alternatives such as hydraulic counterbalance or brake valves to provide simple and effective one way braking, in combination and coupled with one-way friction braking, or one-way ratchet locking devices, to prevent "creep", thereby providing for lower cost and lower energy drive systems.

B. Ragsdale U.S. Patent No. 5,913,613

The Ragsdale Patent does admittedly disclose a power pack comprised of an electric motor 254 in a remote location with respect to a hydraulic drive motor 246. However, it is to be noted that Ragsdale et al. is dealing with that body of prior art concerned with safety covers which are constrained on at least the opposite parallel sides. Moreover, covers of this type which are formed of a flexible fabric have no internal means to enable a propelling movement across the swimming pool and must be pulled by means of cables. Please note, for example, Figures 1 and 2 of Ragsdale et al. which disclose the complex cable drive system employed. As indicated previously, cables of this type are not typically used for pulling the cover across the swimming pool with a buoyant cover.

Although the Ragsdale et al. drive system is currently in use today, while it has proved to be an effective system, it discloses the use of a cable driven cover and also one which is not a floatatable cover. In short, the cover of Ragsdale et al. is not floatatable and would sink unless constrained. As indicated previously, the force of gravity or buoyancy will cause the floatatable cover to move to the closed position. Moreover, that movement to the closed position is uncontrolled unless the cover is otherwise constrained. In short, Ragsdale does not teach anything which would be effectively used in a floatatable cover drive.

In the case of a floatatable cover, some means must be provided in order to determine when the cover is reaching the end of the swimming pool to preclude overtravel. Previously, electrical items such as a limit switch or a counter were used. In the case of Ragsdale, a pressure relief valve could be used. Obviously, since Ragsdale used cables as the drive means, the problems of controlling the movement of an otherwise uncontrolled cover were not addressed in Ragsdale. Another aspect of the Ragsdale reference is the cycle time to open and close the cover, as discussed earlier. The control systems and requirements are entirely different.

With further regard to the citation of the Ragsdale reference, it is difficult to translate anything from this reference to teachings in the instant application. The fact remains that cables

would never be used with a floating cover and, to the best of the knowledge of the applicant have never been used with a floatatable cover. Ragsdale's system must operate with cables and, in contrast, they could not be used in the instant application. Therefore, there is really nothing which translates from Ragsdale to the instant invention.

C. Shults U.S. Patent No. 4,203,174

The Shults Patent was cited to show the use of a latching relay in a swimming pool cover drive system. As indicated above, Shults is actually academic. Shults attempted to deal with the problem of the electrical components being at or near the swimming pool. However, even in the Shults system, most of the electrical components still remain in proximity to the swimming pool. In addition, the Shults control system still does not comply with the applicable safety standards.

It is interesting to note that Shults uses an electrical motor directly adjacent to the swimming pool and separated from the swimming pool essentially by a dry-wall. Shults talks about the electrical insulation and the use of a V-belt 26 formed of a rubber or plastic material. However, simple examination of Figures 1 and 2 reveals that the electric motor 18 is only separated from the water by a dry-wall with a seal allowing for drive components to extend through that dry-wall. Thus, Shults does not really provide

any drive system which is applicable to that taught in the instant application.

D. Layer U.S. Patent No. 4,838,403

The Examiner cited the Layer Patent for an over travel stop activated control valve. In this case, Layer does employ a rotatable shaft along with a member translatable along that shaft between fixed end positions. However, it is respectfully urged that Layer represents non-analogous prior art. This device in Layer is specifically designed for use with aircraft systems and particularly, systems for controlling elevators, or the like, in aircraft. The element shiftable on the rotatable shaft in Layer is driven with enough force to an end position so that a substantial amount of force may be required to reverse that movement. In any event, a patent teaching of a control for the movement of wing flaps and the like represents an entirely different system than that disclosed in the instant application. As a result, Layer necessarily constitutes non-analogous prior art.

It is respectfully urged that one designing a pool cover and, for that matter, the equivalent of an electrically operated limit switch which does not operate with electrical power, would not examine the art of elevator systems used in aircraft. In fact, the two bodies of prior art are so remote from one another that it is not even conceivable how one designing a swimming pool cover drive

system would ever resort to examining the art of elevator control systems. Thus, Layer is so completely remote that it should not be cited as a reference in the instant application.

Notwithstanding, and even if Layer represented relevant prior art, which it does not, Layer is completely devoid of any suggestion that a hydraulic pressure differential is generated and used to operate an electrical latching system. In other words, Layer is strictly a mechanical system. There is nothing within the four corners of Layer which relates to a fluid operated travel limiting system.

It is apparent that Layer is strictly a mechanical system, and is, in effect, controlling the movement of large components which may be under substantial forces. There is essentially no way to equate the problems of controlling the movement of a swimming pool cover with those associated with controlling the movement of aircraft control surfaces.

It is interesting to note that Layer has two prior and very related patents, namely, U.S. Patent No. 4,721,196 and U.S. Patent No. 4,838,403, the latter of which also involves the use of hydraulic systems. Each of these patents emphasize the fact that there is a need to control high inertial components, such as, wing flaps, various control surfaces and the high speed shafts, allowing these surfaces to move. See, for example, the Layer '403 Patent,

column 1, lines 15-20, column 2, lines 1-8 and 13-25. Please also see columns 3 and 4, lines 56-4.

It appears that the Layer '403 Patent uses a hydraulic valve, but only as a safety back-up system. In other words, the hydraulic arrangement is not a prime drive system. There is a prime drive system for moving control surfaces in an aircraft, but the disclosed system of Layer is that of a back-up system. As indicated, Layer's mechanism operates as an override to the main control system so that a control surface on the aircraft does not exceed the pilot controlled limit. Again, it must be emphasized that Layer is used in an entirely different environment and is a system subjected to totally different forces.

It appears that the entire thrust of the Layer '403 Patent, as well as the Layer '196 Patent, is dealing with a back-up system to control the movement of aircraft high speed, high inertia control surfaces and the avoidance of potentially catastrophic results. However, in the case of pool covers, the problems involve very low operational shaft speeds, as stated above, usually in the range of 4 to 5 revolutions per minute. The Layer Patents do not even remotely suggest a generation of a fluid pulse in a fluid drive system and the subsequent operation of an electrical latching circuit.

There is a serious question about the actual operation of the Layer Patent. In fact, Layer is believed to be inoperative. In

substance, it is believed that the motor operating the Layer system cannot reverse or otherwise, Layer would lock up immediately. In short, Layer never disclosed the need for a valve arrangement which would preclude the blockage of fluid flow of a reverse mode of operation. This is because the valve which is closed by mechanical action of a rotating cam, in say one direction, will also block reverse flow of the tank or low pressure line when the drive pump is reversed. The output of the hydraulic motor also drives the cam which depresses the snub valve. Closing of the snub valve now blocks the hydraulic motor return port and the hydraulic motor is prevented from movement to turn the cam to back off and open the snub valve and thereby allow flow from the output side of the hydraulic motor.

In substance, Layer would actually need the equivalent of the valves 424 and 426 in Figures 16 and 17 of this application, thereby allowing flow in the reverse direction. Layer would require the need of some check valve loop allowing the main valve to open in reverse. When the plunger is located in the down position in Layer, there is no return line for the pressure. As a result, Layer inevitably is inoperable and will lock up. As indicated previously, since Layer does not have a workable system of the type shown in Figure 14 of the instant application, Layer is effectively inoperative.

Even if Layer were believed to be an operative system, which is not the case, and even if Layer were believed to be analogous prior art, which is not the case, it is noteworthy that there is nothing within the four corners of this patent which addresses the reading of a pressure differential such as a pressure pulse. Furthermore, there is nothing which relates to the generation of an electrical signal from that pressure pulse.

When examining the prior art generally, it is to be noted that there is no remote signaling with a pressure condition. In effect, the applicant uses the pressure signal to control an endpoint of travel and this simple, but highly effective, system has no counterpoint in the prior art. In short, a pressure pulse is used as a timing device.

In contrast, Layer does not read any pressure pulse condition. Moreover, he has no need for electrical safety as such. Layer is dealing with the stopping of a high speed shaft to preclude destruction of the operating mechanism.

E. Mimeur U.S. Patent No. 3,718,215

The Examiner also cited the Mimeur U.S. Patent No. 3,718,215 for a device which uses a shaft and a traveling nut. Indeed, the applicant has a system, which is similar in some ways to, but greatly different from Mimeur. Mimeur shows only an electrically operated system. By definition, this is the type of system which

applicant wishes to avoid. The use of the Mimeur device adjacent to a swimming pool would completely destroy the purpose of a non-electrical pool cover system adjacent a swimming pool.

Admittedly, the elements 12 and 13, when contacted by a traveler, will operate the electric motor. This, in turn, will control outputs at the mechanical drives comprising the shafts 14 and 15.

Although the applicant's system appears to resemble Mimeur, the applicant relies upon fluid control elements to generate the equivalent of an electrical limit control signal. The applicant actually allows for the generation of a hydraulic pressure differential in the hydraulic line and which, in turn, results in generation of a remote electrical signal. In contrast to the present invention, Mimeur never generates a pressure signal. Furthermore, there are some substantial differences in controlling the operation of a hydraulic motor which has fluid input and output ports and fluid flows, to that of an electric motor, in which energy flows in an entirely different manner, as discussed earlier. In effect, Mimeur has the equivalent of one way control. There is no limit switch to control any driving force.

Mimeur is designed to make or break an electrical circuit to a drive motor and, in that respect, has teachings applicable to the electrical system offered by Granderath. It is possible that Granderath might have been able to use the system offered by

Mimeur, with some substantial modification. However, that would still result in a complete electrical system. It remained for the applicant to provide the first pool cover system, which operated solely on the basis of fluid power, and which provides a travel limiting control operable with fluid flow.

As a matter of interest, Mimeur proposes a device which is very similar to that offered by Goff at an earlier date. In effect, Mimeur only added external adjustment capability of the original safety feature of allowing a traveling nut or other traveling member to travel to an unthreaded section of the shaft as taught by Goff much earlier. In this way, the nut would not be forced against an end limit of movement and destroy the mechanism. Notwithstanding, neither Mimeur nor Goff teach the unique feature which relies upon a hydraulic signal capable of generating an electrical signal therefrom. In both systems, a threaded element engages electrical switches. In short, both Goff and Mimeur propose totally different systems.

VI. Rejection of the Claims on Their Merits

Most of the claims in the patent were rejected on the basis of Granderath taken in combination with Ragsdale et al. The Examiner takes the position that it would have been obvious to modify Granderath with the hydraulic system of Ragsdale et al. Reconsideration is respectfully urged in view of the claims as

amended herein. At the outset, Granderath is using a buoyant cover drive system and Ragsdale et al. is using a cable-operated non-buoyant cover system. As indicated previously, the differences between the two types of cover systems are substantial and the problems relating to the movement of the cover for each are entirely different.

It is all too easy and convenient for the Examiner to suggest that Ragsdale teaches a non-electrical drive system and, therefore, employ that drive system with a cover of the type offered by Granderath. However, what remains unsaid is that Ragsdale has such an entirely different system; the problems solved by Ragsdale are not applicable to the floating cover system. Hence, it is difficult to see how the actual teachings could be combined. Notwithstanding, each of the claims in the application have been very carefully amended and/or considered in view of the prior art and it is believed that the claims, as submitted herewith, patentably distinguish over the prior art of record.

At the outset, it is noteworthy that the applicant herein is very much aware of the state of the prior art, having developed and established a company which manufactures pool cover, both for use in the United States and in other countries. This applicant is also very familiar with the pool cover systems used both in the United States and in Europe. Since many of these pool cover systems are sold in Europe, the applicant has visited various trade

exhibitions in Europe in connection with pool covers. In fact, the applicant is also a part owner of a company in Europe which is presently manufacturing and selling pool cover systems and, in this respect, is keenly aware of the state of the prior art in Europe and elsewhere.

This particular applicant is also fairly well skilled in searching and often conducts searches before filing patent applications. In this case, the applicant does not know of any other prior art which would be more relevant than that cited by the Examiner. In this respect, the search conducted by the Examiner is indeed believed to be thorough.

Turning now to the claims, many of the claims have been amended to call for a fluid drive motor as opposed to a hydraulic fluid drive. Admittedly, the hydraulic drive is preferable, although there is nothing to preclude the drive system of the application from being used with other types of fluid drive systems.

Claim 1 has been more specifically amended to call for the travel limiting means stopping the movement of the cover through the action of a pressure differential which is generated when the cover has reached a closed position to preclude further movement of the cover at that point. The Claim further recites that there is an electrical means which is operable in response to this fluid pressure differential and which generates an electrical response to

stop rotation of the drum. In effect, the applicant has broadly described the fact that a fluid pressure differential, or otherwise a fluid pulse, controls an electrical circuit which causes the generation of an electrical latching, such as, for example, the generation of an electrical signal.

In short, the applicant has provided the equivalent of an electrical limit control arrangement with all of the electrical power being located at a remote location. It is respectfully urged that the prior art of record does not disclose any answering structure. While the Examiner has cited numerous references, such as Mimeur and Layer, neither is really applicable and neither adds anything to Granderath which would respond to the limitations of Claim 1 as now submitted herewith. It is therefore believed that Claim 1 is allowable and favorable reconsideration and allowance is respectfully solicited.

Several of the claims dependent upon Claim 1 and, for that matter, these dependent claims dependent on other independent claims, were non-considered, or deemed to be non-elected species. However, since it is believed that at least Claim 1 is allowable, then Claims 2-12 should be considered and examined in connection with this present application. Allowance of Claims 1-12 is therefore respectfully solicited.

The applicant has added new Claims 68-70 which are all effectively dependent upon Claim 1. Claim 68 calls for the fact

that the fluid pressure line associated with supplying fluid under pressure to the motor also allows for actuation of a fluid pressure switch in response to the generated pressure differential. It is believed that Claim 68, as well as Claims 69 and 70 dependent thereon, are also allowable.

The applicant has amended Claim 13 to call for the fact that the fluid lines which carry the hydraulic fluid to the hydraulic drive motor also carry a pressure differential signal. Specifically, the applicant has more fully amended Clause (e) of Claim 13 to call for the fact that the travel limiting means comprises a pressure responsive means operable in response to a pressure differential relating to the pressure of the fluid in the hydraulic fluid line. In this way, the travel limiting means provides control over the limit of the amount of movement of the cover, similar to an electrical limit switch. In fact, that is exactly what the applicant has provided, namely a system which is the equivalent of and which operates in the same way as an electrical limit control means in terms of stopping the movement of the cover and without the need for electrical power at or in proximity to the swimming pool.

As the Examiner is aware, there is a fluid supply line and a fluid return line from the remote power pack to the hydraulic motor. The supply line usually carries the pressure differential signal back to the remote power pack. However, it is possible to

use the return line to carry that pressure differential signal. For that matter, it is also possible to use a third control line. Notwithstanding, one of those lines, and usually the supply line, will carry the pressure signal back to the remote power pack. That pressure signal is then converted to an electrical signal for control of the power pack and hence of the hydraulic motor.

It is respectfully urged that there is not one teaching in the prior art of record, or any prior art known to the applicant which provides for a means to limit the movement of the cover to the closed position only with a fluid pressure differential. Moreover, there is nothing in the prior art which could, afortori, therefore provide for the fluid line carrying that fluid signal.

It is therefore believed that Claim 13 and the associated dependent Claims 14-18 patentably distinguish over the art of record and favorable reconsideration and allowance is respectfully solicited.

Claim 19 and the associated dependent Claims 20-26 all cover the combination of the drum, the fluid operated drive and the brake means. Specifically, it is recited that the brake means controls the speed of movement of the cover in one direction only. By definition, the brake means will prevent rotational acceleration of the cover drum and as a result, control the speed of movement of the cover as it moves toward the closed position.

Claim 19 has been amended to recite that the brake means is operable in two modes to provide a positive braking action to limit the rate of movement of the cover. In the first mode, there is absolutely no breaking action applied to either the cover or the drum when the cover is being spooled upon the drum that is, being moved to the opened position. Any breaking action would necessarily add to the amount of force necessary to rotate the drum to thereby wind the cover onto the drum. In the second mode of operation, there is a positive braking action applied and that braking action limits the rate of movement of the cover when the cover is moving to the closed position.

It is respectfully urged, contrary to the position of the Examiner, that the prior art of record discloses no answering structure. It is to be noted that the worm gear structure provided by Granderath does actually provide a braking action in both directions. Admittedly, that braking action is much greater when rotating in one direction than when rotating in the reverse direction. Nevertheless, even when operating in the reverse direction, the worm gear drive of Granderath does provide a braking direction. In other words, Granderath will provide a braking action to the cover as the cover moves toward the closed position.

Detrimental to the system of Granderath is the fact that it will also provide a braking action in the reverse direction when the cover is being moved to the opened position. This necessarily

will add to the load against which the motor must operate to wind the cover onto the drum. Inasmuch as the claims now recite that there is no braking force in one of those directions, it is urged that Granderath does not respond to Claim 19 or the claims dependent thereon. The other references of record are not relevant to the limitations recited in Claim 19. Both Shultz and Ragsdale et al. relate to the tarp-type cover system which is operated by cables. Hence, they have no need for a braking mechanism as such. Layer and Mimeur are more specifically directed to the travel limiting means and these, again, would not be applicable for the reasons described above.

The Vesbach Patent No. 4,102,382 relates to an overhead door operator and the Goff Patent No. 1,551,512 discloses an electrical limit switch. Hence, none of the other references relate to a swimming pool cover. Lydecker also relates to a gate operator. Consequently, none of these references deal with the problem of providing a braking action with respect to a cover. It is therefore believed that Claim 19 and the claims dependent thereon are allowable and allowance therefore is respectfully solicited.

Claim 27 was more specifically directed to the pool cover system which uses the travel limiting device. Admittedly, some of the details of that travel limiting device, as, for example, a traveler movable on a threaded shaft and which provides a responsive action when the traveler reaches end positions is

suggested by Mimeur and Layer. In fact, it is believed that these are the only two references which are applicable to subject matter of the type presented in Claim 27.

Claim 27 further recites that the travel limiter has a travel limiting element which moves between travel limiting end positions and which is proportional to the end positions of movement of the cover. In other words, the travel limiter actually mimics the action of the swimming pool cover. Thus, the travel limiter has a position generally proportional to the position of the cover at any point during its travel.

Claim 27 has been amended to fully distinguish over Layer or Mimeur or any of the other references of record. Claim 27 now calls for the fluid control means associated with the travel limiter end positions to provide a pressure condition for controlling movement of the cover. Moreover, Claim 27 calls for the complete absence of any electrically operable component at the travel limiting device. It is respectfully urged that the art of record does not provide any answering structure. Clearly, there is nothing within the four corners of Mimeur or Layer to suggest these limitations. Allowance therefore is respectfully solicited.

The applicant has cancelled Claim 28, as well as numerous other claims, in the application in order to reduce the number of issues in the application. However, with respect to Claim 27, the applicant has added a new Claim 76 which calls for the electrical

circuit arrangement operable in response to that pressure condition. It is therefore believed that Claim 27 and the newly added Claim 76 are allowable and allowance therefore is respectfully solicited.

The applicant has cancelled Claims 29-37 which were directed to a non-elected invention, pending the filing of such subject matter in a divisional patent application.

The applicant has also cancelled Claims 38-45, in an effort to reduce the number of issues in this application. These claims originally contained subject matter similar to that of Claim 1 and it is believed that Claim 1 adequately covers that facet of the invention.

The applicant has retained Claims 46 and 47 which, initially, are similar to Claim 1. However, these claims are method claims, as opposed to Claim, 1 which is directed to the system per se. Nevertheless, Claim 46 and its dependent claims do call for the movement of a traveler element and the generation of a hydraulic pressure condition when the traveler element has reached a first limit of travel. Claim 46 also calls for the converting of that pressure condition into an electrical action at a location remote from the swimming pool to thereby stop the power to the cover drum. As indicated previously, the art of record provides no answering structure and it is believed that Claim 46 and the dependent Claim 47 are allowable. Allowance therefore is respectfully solicited.

Claims 49-63 have been cancelled and will be re-filed, subject to the filing of a divisional application therefore.

Claims 64-67 have also been cancelled.

The applicant has eliminated from Claim 1 the recitation of the movement control means, since it was not necessary for patentability of the claim. However, the applicant has added Claim 77, which is dependent upon Claim 1 to cover that feature. In like manner, the limitation of the travel limiting device has been eliminated from Claim 19 since the major feature of that claim is the brake means. However, that concept of the travel limiting device has been added in new Claim 78 which is dependent upon Claim 19.

The applicant has also added new Claims 79-88 which are patterned somewhat along the lines of Claim 1. However, these claims are more specifically directed to the rotatable cover, the fluid drive motor, and the power pack remote from the fluid drive motor. Specifically, Claim 79 calls for the means for detecting the presence of the cover when the cover has reached or is approaching an end position and causes the generation of an elevated pressure condition therefore. This pressure condition is essentially that pressure pulse. The claim also calls for the electrical arrangement causing the generation of an electrical signal in response to that pressure condition. In this case, the electrical arrangement is that of causing a responsive electrical

action to abate the operation of the fluid motor by the power assembly. In effect, this combination remains unanswered by the art of record and allowance therefore is respectfully solicited.

Claims 78-85 all deal with details of this combination and are believed to be allowable for the reasons presented regarding the allowance of Claim 1.

In summary, it is believed that each of the claims in this application does cover the unique concepts which have not been answered by the art of record and allowance is therefore respectfully solicited. As indicated previously, since the generic claims are believed to be allowable, it is believed that all specie claims, whether or not elected, are similarly allowable. Allowance therefore is respectfully solicited.

Dated: Sept 29, 2003

Respectfully submitted,

ROBERT J. SCHAAP
Registration No. 20,577
Attorney for Applicant
(818) 346-6555

C:\Documents and Settings\All Users\Documents\Data\Aquamatic\09829801\Amendment C

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: COMMISSIONER OF PATENTS AND TRADEMARKS, WASHINGTON, D.C. 20231 on 9/29, 2003.

Date of Signature: 9/29, 2003

(Signature)

C:\Documents and Settings\All Users\Documents\Data\Aquamatic\09829801\Amendment C